A CLOUD GURU

Lesson Description - Numbers

Let's learn about some of the core data types in Python: the number types `int` and `float`.

Python Documentation For This Video

- numeric types (the `int` and `float` types)

Numbers

There are to main types of numbers we'll use in Python: `int` and `float`. For the most part, we won't be calling methods on number types — instead, we will use a variety of operators.

```
>>> 2 + 2 # Addition
4
>>> 10 - 4 # Subtraction
6
>>> 3 * 9 # Multiplication
27
>>> 5 / 3 # Division
1.6666666666666667
>>> 5 // 3 # Floor division, always returns a number without a
remainder
1
>>> 8 % 3 # Modulo division, returns the remainder
2
>>> 2 ** 3 # Exponent
8
```

If either of the numbers in a mathematical operation in Python is a float, then the other will be converted before carrying out the operation and the result will always be a float.

Converting Strings and Numbers

It's not uncommon for us to need to convert from one type to another when writing a script. Python provides built-in functions for doing that with the built-in types. For strings and numbers, we can use the `str`, `int`, and `float` functions to convert from one type to another (within reason).

```
>>> str(1.1)
'1.1'
>>> int("10")
10
>>> int(5.99999)
5
>>> float("5.6")
5.6
>>> float(5)
5.0
```

You'll run into issues trying to convert strings to other types if they aren't present in the string.

```
>>> float("1.1 things")
Traceback (most recent call last):
  File "<stdin>", line 1, in <module>
ValueError: could not convert string to float: '1.1 things'
```